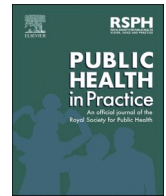




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Letter to the Editor



COVID-19 disruption to medicine supply in Bangladesh: Searching for a solution to drug shortages

Letter to the Editor

We read with interest the article of Lucero-Prisno III et al. [1] elucidating to the medicine shortage crisis in Sudan. During the COVID-19 pandemic, access to medicines has also become of great concern in Bangladesh. Bangladesh, which is a middle-low-income country in South Asia, is losing the battle against the pandemic, owing to its inefficient healthcare system. In addition, the healthcare system is currently failing to provide adequate access to medicines for the population.

The pharmaceutical industry in Bangladesh is one of the largest sectors to bring in foreign currency. According to the Bangladesh Association of Pharmaceutical Industries (BAPI) and Directorate General of Drug Administration (DGDA), approximately 98% of the domestic demand for pharmaceutical products is supplied by local manufacturers, with the foreign market responsible for only 2% of the products produced. However, approximately 95% of all active pharmaceutical ingredients (APIs) that are needed for domestic production come from other countries, such as China, South Korea and India [2,3]. Because of this dependency, circumstances where governments limit exports, such as the COVID-19 pandemic, can substantially impact the production capacity of pharmaceutical industries and, as a result, an increase in price is seen for both the raw materials and medicines themselves. In addition, the government restrictions and blockages can lead to the temporary closure of factories and interrupt the distribution and sale of medicines, thus increasing demand and, consequently, prices.

As a result of the COVID-19 pandemic, a substantial decline was seen in the pharmaceutical industry in Bangladesh, with reduced expansion in the life-saving drug market [4]. As in other countries around the world, where the impending shortage of essential medicines during the pandemic has impacted the health and quality of life of the population, drug shortage in Bangladesh has become a growing problem due to lockdowns and increasing demand [5]. Currently, the demand for antimalarials, antibiotics, painkillers, medicines for common colds and vitamins is up by 70%, which has resulted in the shortage of these drugs and a price increase of more than 50% for these medicines. The medicine shortage is also seen for essential drugs that treat non-communicable diseases, such as diabetes and hypertension, whose treatment was a challenge in Bangladesh, even before the pandemic [3]. As a result, mortality in Bangladesh could be further exacerbated, as the burden of deaths caused by COVID-19 may be compounded by the increased deaths due to the shortage of essential drugs, making it impossible for the industry to fill the gap produced by the lethal virus. [4].

In such a scenario, it is crucial to determine, evaluate and enhance the overall efficiency of the medicine supply framework. Drug management practices are linked to policies that ensure medicines are safe and affordable. Essential medicines need to fulfil patient requirements. Therefore, this letter aims to discuss the factors that influence drug

shortages in Bangladesh and highlight the lessons to be learned by government and pharmaceutical companies.

The reasons for drug shortage in Sudan are vast, ranging from political and financial instability and the privatisation of the pharmaceutical sector to the lack of control on its pricing policies. On the contrary, in Bangladesh, the grounds for the crisis stem from the national drug policy and inherent dysfunction of the pharmaceutical sector. More specifically, drug price affordability and lack of proper distribution and maintenance systems are the principal causes of drug shortage. In addition, lack of raw materials and insufficient research investment by government and private industry leads to the inadequate supply of medicine in Bangladesh. Unqualified medical practitioners and insufficient investment in health sector development are additional factors leading to drug shortage in Bangladesh.

The price of medicines has been increasing since March 26, 2020, when the government in Bangladesh announced a 5-day public holiday and banned all inter-district transport. Many pharmaceutical processes have been adjusted to limit COVID-19 transmission, leading to decreased productivity and output, subsequently impacting the medicine supply chain [6]. Illicit trade of medicines and other medical products are among the most prominent factors causing drug shortage in Bangladesh during the pandemic [7]. Self-purchase and panic buying of some drugs without prescriptions, such as chloroquine, hydroxychloroquine and some antibiotics, was also seen during the initial period of the pandemic [8].

Additionally, for Bangladesh, which has an import-dependent pharmaceutical industry, the ban on India's API exports became a precursor for hard times [9]. This scarcity of prescribed medications contributed to corporations and individuals frequently leveraging the sale potential with disinformation. In addition to hospitalisations and fatalities, disinformation and the endorsement of hydroxychloroquine by governments and others have significantly influenced the increase in price of medicines [3]. The COVID-19 infodemic emerged in social and mainstream media, mainly contributing to encouraging self-medication among the general population. Bangladesh's social consciousness is considerable, but there is a great deal of deception generated by a misunderstanding about proposed COVID-19 therapies. The distribution of misinformation has contributed to panic buying of medications, such as chloroquine/hydroxychloroquine and ivermectin, which has a considerable risk of escalating life-threatening complications upon inappropriate use [10].

Other challenges for the pharmaceutical industry in Bangladesh include the lack of available personnel (due to introducing a mandatory 14-day quarantine programme by provincial governments for returning staff), shortages of packing materials and disruption of transport networks (such as loss of land transport to warehouses and beyond, and the reduced number of freight flights). In some cases, sea routes were

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attempted as an alternate solution to the lack of flights; however, reduced access and transportation of goods to and from ports, delayed ships, vessels being diverted to other ports, delayed customs clearance and reduced port personnel posed additional challenges to importing the raw materials [11].

Authorities in Bangladesh must urgently devise solutions for the medicine shortage crisis. In the short term, the flow of APIs must be secured. The authorities may consider discussing terms with the European Union, the US or Russia, where API production is sufficient. Legal action could be taken against panic-buying individuals, while, at the same time, identifying those who are most at risk and ensuring adequate medicine supply through streamlined application procedures. In the long term, it is necessary to enhance the industry towards self-sufficiency, provide local scientists with the opportunity to work in the industry and contribute to its betterment, and educate the public on rational drug consumption.

Authors' contributions

Mohammad Mehedi Hasan and Mohammad Yasir Essar developed the concept for this letter. Mohammad Mehedi Hasan, Md. Masum Billah, Md. Shahadat Hossain, Ana Carla dos Santos Costa and Rachana Phadke wrote the first draft. Christos Tsagkaris and Mohammad Mehedi Hasan revised the second draft and improved the manuscript. Sheikh Mohammed Shariful Islam, Shoaib Ahmad and Mohammad Yasir Essar made the critical comments and revision. All authors have contributed, read and approved the final manuscript.

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